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09/183,335	10/30/1998	ROBERT A. FOSTER	M-7085US	3004

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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/183,335
Filing Date: October 30, 1998
Appellant(s): FOSTER, ROBERT A.

Edward C. Kwok
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/12/07 appealing from the Office action
mailed 5/18/06

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Disclosed Prior Art. Applicant's Specification. pp. 1 - 2.

Parsaye, Kamran & Chignell, Mark. Expert Systems for Experts. John Wiley & Sons.
1988. pp. 35 - 60, 177 - 178, 191 - 210 and 295 - 309.

Hndler, James A. Expert Systems: The User Interface. Albex Publishing Corporation.
Norwood, NJ. 1988. pp. 31, 46 - 47, 113 and 133.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 – 2, 4 – 16 and 19 - 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Disclosed Prior Art (applicant's specification, pp. 1, line 15 – 2, line 21) and Parsaye (Parsaye, Kamran & Chignell, Mark. *Expert Systems For Experts*. John Wiley & Sons. 1988. pp. 35 – 60, 177 – 178, 191 – 210 and 295 - 309).

Regarding Claims 1 - 2, Disclosed Prior Art discloses, a method for pricing financial transactions (products), said method comprising:

- creating a plurality of price tables (fee arrangements – see p. 2, lines 1 – 7);
- a plurality of product rules (product designation. “Fee arrangements can take many shapes, e.g., by product...” – see p. 2, lines 1 – 7) each applicable to one or more of said financial transactions (products), wherein each of said product rules (product designation) is linked to one of said price tables (fee arrangements). (see p. 2, lines 1 – 21); and
- for each one of said financial transactions (products). (see p. 2, lines 1 – 21);
- identifying an applicable one of said product rules (product designations) for said transaction (product). (see p. 2, lines 1 – 21); and

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- pricing said transaction (calculating fee for said product) according to the price table (fee arrangement) linked to said identified applicable product rule (product designation). (see p. 2, lines 1 – 21); and
- wherein said price table (fee arrangement) comprises a billing (calculation of fees) method. (see p. 2, lines 1 – 21).

Disclosed Prior Art does not teach in a data processing system, a method for pricing financial transactions, said method comprising:

- creating, in a database system of the data processing system, a plurality of price tables; and
- creating, in the database system, a plurality of product rules each applicable to one or more of said financial transactions, wherein each of said product rules is linked to one of said price tables.

Disclosed Prior Art does not teach that the utilization of price tables (fee arrangements) is automated. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have automated the method, since it has been held that broadly providing a mechanical or automatic means to replace manual activity that accomplishes the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

Storage of information in a database and the use of a rule-based system/method for retrieval and filtering of said information is old and well-known in the art of computer system designs and expert system design, as evidenced by Parsaye (see pp. 35 – 60 and 195 – 211). It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to have modified Disclosed Prior Art by incorporating a database storage capacity and a rule-based system/method for retrieval, as disclosed by Parsaye, to allow for the use of an expert system to automate the retrieval and application of data, such as pricing, efficiently and quickly.

Regarding Claim 4, Disclosed Prior Art does not teach a method wherein:

- each of said product rules is linked to one of said price tables by a price table name.

Parsaye discloses a method wherein:

- each of said product rules (rules) is linked (related) to one of said price tables (frames) by a price table name (frame-name). (see pp. 191 – 200, especially 5.8.1. Rules That Act on Frames, p. 196).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art and Parsaye by incorporating a linkage between the product rule (product designation) and price tables (frames) by the name of the price table (frame), as disclosed by Parsaye, to incorporate and utilize standard conventions and procedures commonly utilized for rule-based expert systems, such as allowing the rule access to the stored information.

Regarding Claim 5 - 16, Disclosed Prior Art discloses a method:

- wherein an entry in each of said price tables (fee arrangements) comprises a pricing method (fee). (see p. 2, lines 1 – 21).

Neither Disclosed Prior Art nor Parsaye disclose a method:

- wherein said pricing method is flat fee;

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- wherein said pricing method is unit price;
- wherein said pricing method is unit cost;
- wherein said pricing method is volume discount;
- wherein said pricing method is tiering;
- wherein said pricing method is cost plus;
- wherein said pricing method is minimum revenue;
- wherein said pricing method is markup of total price; and
- wherein said pricing method is bundled pricing; and

The above cited pricing methods are old and well-known in the art of marketing and product pricing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art and Parsaye by incorporating various old and well-known pricing methods into the price tables (fee arrangements) allowing for pricing of financial transactions (products) based upon any old and well-known pricing strategies that the inventor desired.

Regarding Claim 19, Disclosed Prior Art does not teach a method wherein:

- said product rules comprise a default rule.

Default rules in a rule-based expert system is old and well-known in the art of computer system design and expert system design, as evidenced by Parsaye (see pp. 177 – 178). It would have been obvious to have modified Disclosed Prior Art and Parsaye by incorporating a default rule, as disclosed by Parsaye, allowing for the assumption that some “events have regular or default behavior.” (see p. 177).

Regarding Claim 20 – 22, Disclosed Prior Art discloses a method wherein:

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- said price table (fee arrangement) contains prices (fees). (fee arrangements – see p. 2, lines 1 – 7).

Neither Disclosed Prior Art nor Parsaye teach a method wherein:

- said price table (fee arrangement) contains costs; and
- said price table (fee arrangement) contains negative values (costs/losses).

Consideration of costs and negative values (costs/losses) in pricing is old and well-known in the art of marketing and pricing. It would have been obvious to have modified Disclosed Prior Art and Parsaye by incorporating costs and negative values into the pricing tables (fee arrangements) allowing for inclusion of old and well-known considerations utilized in pricing.

Claims 3, 17 – 18 and 23 - 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Disclosed Prior Art and Parsaye, as in Claim 1 above, and in further view of Hendler (Hendler, James A. *Expert Systems: The User Interface*. Albex Publishing Corporation. Norwood, NJ. 1988. pp. 31, 46 – 47, 113 and 133).

Regarding Claim 3, Disclosed Prior Art discloses a method, wherein each of said product rules (product designation) comprises:

- a name of said product rule (product designation. “Fee arrangements can take many shapes, e.g., by product...” – see p. 2, lines 1 – 7 – Inherently there must some name for the product if the fee arrangement is organized by product); and
- pricing and billing information (fee arrangements – see p. 2, lines 1 – 7).

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Disclosed Prior Art does not teach a method wherein each of said product rules comprises:

- a name of said product rule;
- a status of said product rule;
- pricing and billing information, including a link to one of said price tables;
and
- display only information.

Parsaye discloses a method wherein each said produce rule (rule) comprises:

- including a link (relation) to one of said data in information storage (frames). ("Rules, which relate facts and frames." – see p. 57).

Hendler discloses a method wherein each of said product rules (rules) comprises:

- a name of said product rule (rule). ("...shows the importance of naming rules carefully in the first place..." – see p. 113);
- a status of said product rule (rule). ("The "..." marks the beginning of rule attributes. There are predefined system attributes, such as status and author." – see p. 133); and
- display only information. (Rule accesses knowledge base and retrieved information is "selectively displayed as desired by the knowledge base author or eventual users by using the DISPLAY command (e.g. DISPLAY DEFINITION (OBESITY) or DISPLAY CERTIFICATION)." – see pp. 46 – 47).

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It would have been obvious to one with ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art and Parsaye by incorporating a linkage between the product rule and stored data, as disclosed by Parsaye, and naming the product rule, providing a status of the product rule and assigning display only information, as disclosed by Hendler, to incorporate and utilize standard conventions and procedures commonly utilized for rule-based expert systems.

Regarding Claim 17, neither Disclosed Prior Art nor Parsaye teach a method wherein said product rule further comprises:

- a plurality of mandatory attributes, said mandatory attributes include an identifier for said product rule.

Hendler discloses a method wherein said product rule further comprises:

- a plurality of optional/mandatory attributes (rule attributes), said mandatory attributes (rule attributes) include an identifier (name) for said product rule.
(supra – see pp. 113 and 133).

It would have been obvious to one with ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art, Parsaye and Hendler by incorporating attributes, both optional and mandatory, with one attribute including an identifier (name) to the product rule, as disclosed by Hendler, to incorporate and utilize standard conventions and procedures commonly utilized for rule-based expert systems, such as providing the rule an identifier by which access to the rule can be obtained.

Regarding Claim 18, Disclosed Prior Art does not teach a method further comprising:

- in creating one of said product rules, applying a validating rule to validate said product rules prior to committing said product rules to said database system.

Validation and verification of rules within a rule-based expert system prior to implementation is old and well-known in the art of computer system design and expert system design, as evidenced by Parsaye (see pp. 295 - 309) and Hendler (see p. 31). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art, Parsaye and Hendler by incorporating a validating rule, as disclosed by Parsaye and Hendler, to access the validity and accuracy of the rules prior to implementation of the system.

Regarding Claim 23, further system claim would have been obvious from method claims rejected above, Claims 1, 4 and 17, in combination, and is therefore rejected using the same art and rationale.

Regarding Claim 24, further system claim would have been obvious from method claim rejected above, Claim 2, and is therefore rejected using the same art and rationale.

Regarding Claim 25, further system claim would have been obvious from method claim rejected above, Claim 3, and is therefore rejected using the same art and rationale.

Regarding Claim 26, further system claim would have been obvious from method claim rejected above, Claim 17, and is therefore rejected using the same art and rationale.

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Regarding Claim 27, further system claim would have been obvious from method claims rejected above, Claims 3 and 17, in combination, and is therefore rejected using the same art and rationale.

Regarding Claim 28, further system claim would have been obvious from method claims rejected above, Claim 18, and is therefore rejected using the same art and rationale.

Regarding Claim 29, further system claim would have been obvious from method claims rejected above, Claim 19, and is therefore rejected using the same art and rationale.

(10) Response to Argument

For the ease of the Board, Examiner presents a mapping of the claim limitations of the Claim 1 to the applicable prior art references.

App#:	09/183,335		
Phrase #	Claim 1	Disclosed Prior Art	Parsaye (NPL)
1	In a data processing system, a method for pricing financial transactions, said method comprising	a method for pricing financial transactions (products), said method comprising	
2	creating, in a database system of the data processing system, a plurality of price tables;	creating a plurality of price tables (fee arrangements – see p. 2, lines 1 – 7);	creating, in a database system of the data processing system, a plurality of tables (tables or frames). (see pp. 35 - 60 and 195 - 211);

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3	creating, in the database system, a plurality of product rules each applicable to one or more of said financial transactions, wherein each of said product rules is linked to one of said price tables; and	a plurality of product rules (product designation. "Fee arrangements can take many shapes, e.g., by product..." – see p. 2, lines 1 – 7) each applicable to one or more of said financial transactions (products), wherein each of said product rules (product designation) is linked to one of said price tables (fee arrangements). (see p. 2, lines 1 – 21);	creating in the database system, a plurality of rules, wherein each of said rules is linked to one of said tables. (see pp. 35 - 60 and 195 - 211);
4	for each one of said financial transactions: identifying an applicable one of said product rules for said transaction; and	for each one of said financial transactions (products). (see p. 2, lines 1 – 21); identifying an applicable one of said product rules (product designations) for said transaction (product). (see p. 2, lines 1 – 21); and	
5	pricing said transaction according to the price table linked to said identified applicable product rule.	wherein said price table (fee arrangement) comprises a billing (calculation of fees) method. (see p. 2, lines 1 – 21).	retrieving information according to the price table linked to said applicable rule. (see pp. 35 - 60 and 195 - 211).

Claims 1 – 2, 4 - 16 and 19 - 22

In response to Appellant's argument that prior art reference(s) fail to disclose claim limitation(s), specifically that prior art reference(s) fail to disclose "price tables" and "product rules", Examiner refutes such an assertion as no definition of claim terminology was articulated in the original specification nor utilized in the previously

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presented claim(s) sufficient to invalidate the Examiner's interpretation of the claim language. The broadest definition for the term was applied as to provide the "broadest reasonable interpretation consistent with the specification during the examination of a patent application since the applicant may then amend his claims." See *In re Prater and Wei*, 162 USPQ 541, 550 (CCPA 1969).

As to "price tables" and "product rules", the Discussion of Related Art section of the Appellant's specification states:

Furthermore, fee arrangements change in value and structure in response to competitive situations. Fee arrangements can take many shapes, e.g., by product; by time of submission; by specified execution time; by window of time between submission and execution; by transaction value; by pre-assigned payment slots; and/or by some combination of these. In addition, customers are mobile and shop for the best deals. The methods of payment, timings of payment, cash management practices and credit requirements change. Also, competitors pricing strategies change. In response to these changes, FSCs need the ability to calculate pricing accordingly. (emphasis added, see p. 2)

Examiner asserts that "fee arrangements," as disclosed by the Appellant, reads on the claimed "price tables", as the fees contained within the fee arrangements are equivalent to the prices contained within the price tables.

Examiner has interpreted "product rules," as the identification of the proper "fee arrangement," such as by product designation or by time of submission, as disclosed by the Appellant, as such identification would control the fee arrangement to be utilized.

Furthermore, Examiner asserts that Disclosed Prior Art discloses "a plurality of product rules each applicable to one or more of said financial transactions, wherein each of said product rules is linked to one of said price tables," as claimed in Claim 1. As disclosed by Disclosed Prior Art there are many identifiers, such as product

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designations or time of submission, each applicable to one or more of said financial transactions, wherein each of said identifiers is linked to one of said fee arrangements.

As Appellant contends, Disclosed Prior Art does not disclose “the operations of a database system.” (see Appeal Brief, p. 11). Examiner indicated that various underlined portions of the claim limitations that were not taught by Disclosed Prior Art in the previous Office Action. Such claim limitations were directed to the usage of a “data processing system” and the creation of said “price tables” and “product rules” within “a database system.

Parsaye discloses a data processing system, a database system containing a plurality of tables, such as frames, and a plurality of rules acting upon such tables to retrieve corresponding information from said tables. Specifically, Parsaye states:

Working in the first direction (from frames to rules), frames can have rules (known as attached predicates) that control the storage and retrieval of information. This allows us to maintain the integrity of knowledge and provides for dynamic information management, as discussed in Sections 5.5.1 and 5.5.2. In a hybrid system, though, it will be natural to go in the second direction (from rules to frames) during inference and to use logic predicates to control reasoning and to use frames as an intelligent database that maintains the knowledge required for reasoning.

The storage and retrieval properties of frames make them a good way of implementing an intelligent database. Many expert systems have to rely heavily on intelligent data management. An integrated rule-frame system is an ideal environment for intelligent data management. In general, it is more convenient to define knowledge management issues within frames and inference issues within rules. However, the integration of rules and frames often raises practical issues about whether to use frames that call rules or rules that call frames in particular situations. (emphasis added, see p. 195).

Furthermore, Parsaye discusses the equivalence between “frames” and “tables”, when Parsaye states:

To integrate expert systems and databases, we need a uniform approach to data management and knowledge management. In Section 5.10.1 we discuss how

relational databases may be uniformly merged with our integrated rule and frame formalism.

5.10.1 Mapping Frames and Logic to Databases

As discussed in appendix D, **the relational data model views the world in terms of relations which are essentially tables**. We often use the term table, instead of relation. Each entry has a value for each attribute. Each table has a schema, which lists its attributes or fields. The relation or table is obtained by providing instances, entries or records for the schema. Further, each entry or record has a record number which uniquely identifies it. (emphasis added, see p. 204).

and;

Again the relationship between frames and relational databases is clear. Frame names correspond to table names, slots to attributes and instances to records.

Further, we now have a three way mapping (Figure 5.10) between tables, predicates and frames as follows:

Relational Databases	Frames	Logic
Schema	Frame schema	Clause schema
Attribute	Slot	Argument
Value	Value	Value
Record	Instance	Fact

(see p. 207)

Examiner asserts that if a user was to convert a "fee arrangement," as disclosed by Disclosed Prior Art, into a "table" or "frame" located within a database system, as disclosed by Parsaye, such would be a "price table" located within a "database system," as claimed by the Appellant.

Examiner further asserts that if a user was to access fee information contained within such an electronic price table, a "rule" would need to be employed for retrieval of such information, as disclosed by Parsaye, in the same manner that an identifier, such

as a product designation or time of submission, is utilized in conjunction with fee arrangements, as disclosed by Disclosed Prior Art.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art by incorporating the use of tables and rules within a database system for processing information, as disclosed by Parsaye, in attempt to reap the benefits of a computerized expert system, such as speed and uniformity, for calculation of prices for financial transactions.

In response to Appellant's argument that the Disclosed Prior Art "relates only generally the fee arrangements and the competitive environment associated with financial services" (see Appeal Brief, p. 11), Examiner asserts that such is immaterial. Even if such information was merely intended as a general discussion, such intentions do not negate the fact that the information still reads on the claim limitations and that such claim limitations are within the scope of the material contained within the "Discussion of Related Art."

In response to Appellant's argument against the application of Parsaye due to its narrow definition of table ("a table that has a schema, attributes and fields" – see Appeal Brief, p. 14), Examiner asserts that the fact that Parsaye articulates a narrow definition for said term or suggests additional elements (e.g. schema, attributes and fields) in conjunction with said term is immaterial, as Parsaye discloses a table nonetheless.

In response to Appellant's assertion that neither Disclosed Prior Art nor Parsaye disclose nor suggest the asserted claim limitations, Examiner asserts that Appellant is incorrect. While neither prior art reference when viewed in isolation discloses the claim

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limitations, the references when read in combination do disclose the claim limitations.

Examiner asserts that "one cannot show non-obviousness by attacking references individually where, as here, the rejections are based on combinations of references." *In re Keller, Terry, and Davies, 208 USPQ 871, 882 (CCPA 1981)*. In the instant case, applicant refutes each prior art reference individually, rather than viewing them in combination, in light of the totality of their combined teachings.

In response to Appellant's argument against the application of Parsaye due to its specific definition of table, such a narrow definition does not negate its value as

Claims 3, 17 – 18 and 23 – 29

All argument(s) and/or rationale(s) set forth above with respect to earlier addressed claim(s), Claim(s) 1 – 2, 4 - 16 and 19 - 22, are hereby incorporated and/or reapplied so as to apply to Claim(s) 3, 17 – 18 and 23 - 29 where applicable.

In response to Appellant's implied criticism of the motivation to utilize Hendler, Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Disclosed Prior Art and Parsaye by incorporating the standard conventions and procedures commonly utilized in rule-based systems, as disclosed by Hendler, as "to speed up and clarify browsing" (see p. 113) or to otherwise present a better user interface for use with the rule-based system

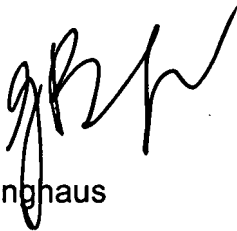
(11) Related Proceeding(s) Appendix

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No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

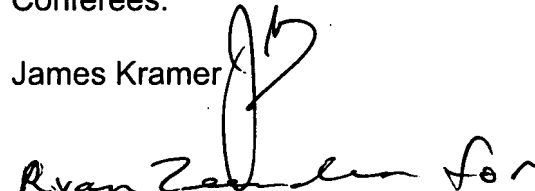
Respectfully submitted,

A handwritten signature in black ink, appearing to read 'JBH', written over the printed name Jason Borlinghaus.

Jason Borlinghaus

Conferees:

James Kramer

A handwritten signature in black ink, appearing to read 'Ryan Zeeb for', written over the printed name Vincent Millin.

Vincent Millin